INTRODUCTION

Septic arthritis of the sternoclavicular joint (SCJ) is a rare condition; the SCJ is involved in 9% of all cases of infectious arthritis [1]. It has been associated with numerous predisposing factors such as immunosuppressive disorders, diabetes and heroin addiction [2, 3]. Nevertheless, isolated cases of SCJ arthritis have been reported in apparently healthy adults [2]. Medical treatment, along with a surgical approach, is often recommended [1]. We describe a rare case of SCJ infection due to *Staphylococcus aureus* in an adult without known underlying predisposing conditions and in which the recovery was achieved with medical therapy alone.

CASE REPORT

A 56-year-old male teacher with a history of hypertension and duodenal ulcer was admitted with a left shoulder pain that appeared 3 days before admission and became severe, associated with high fever and vomiting. On examination, the patient appeared ill, had a fever of 40 °C, a pulse rate of 105/min, a respiratory rate of 24/min, and blood pressure at 140/85 mmHg. He showed no respiratory symptoms. Physical examination revealed tenderness, swelling and erythema over the left sternoclavicular joint. There was severe limitation of movement of the left shoulder. Laboratory data showed: erythrocyte sedimentation rate 65 mm/1 h, white blood count 11700/mm³, C-reactive protein 22.5 mg/dl, blood urea nitrogen 57 mg/dl and creatinine 1.3 mg/dl. Ultrasound evaluation of the SCJ was suggestive of acute arthritis with sternocleidomastoid muscle involvement. The chest radiograph showed left small pleural effusion and minimal retrocardiac pulmonary infiltrate. Three blood cultures yielded growth of *S. aureus*. In order to exclude predisposing factors or underlying conditions, HIV test, dosages of Ig and lymphocyte subpopulations, cancer markers and sonographic evaluation of the heart and the abdomen were performed, and all resulted negative or within the limits. Neither diabetes nor history of recent trauma, intravenous drug abuse, immunosuppressive therapy or connective disorders were documented. The patient was treated with teicoplanin and ceftriaxone intravenously for four weeks and his condition gradually improved. The following echography of the SCJ documented a significant improvement in the inflammatory process and chest radiography showed almost complete regression of pleuropneumonia. The patient was discharged from hospital with normal functioning of the involved joint. Antibiotic therapy with parenteral ceftriaxone and oral ciprofloxacin followed by oral ciprofloxacin and rifampin, was continued for a total of five weeks. Because of the reappearance of pain in the same SCJ, echography and computerized tomography (CT) scan were performed, and both documented the presence of osteoarthritis and the appearance of intrarticular abscessual collection. In agreement with the surgeon, intravenous therapy with teicoplanin and ceftriaxone was reinitiated and...
continued for four weeks. Subsequently, the patient progressively improved: four months after the onset of symptoms, the patient had a normal functioning of the affected joint, had a normal index of inflammation and echography examination was compatible with a resolving flocculent lesion.

**DISCUSSION**

The SCJ is commonly involved in ankylosing spondylitis, rheumatoid arthritis and degenerative arthritis and, rarely, it may also be the site of septic arthritis [1]. Risk factors for SCJ infection include immunosuppressive disorders, diabetes, haemodialysis, alcoholism, connective disorders, cancer, heroin addiction, trauma, and subclavian venipuncture [1-3]. As in the patient reported here, isolated cases of SCJ arthritis have been described in adults without known underlying predisposing conditions [1]. *S. aureus* is the most commonly involved microorganism in patients with SCJ arthritis, although infection has also been reported with β-haemolytic streptococci, *S. pneumoniae*, *P. aeruginosa*, Brucella species and other gram-negative bacilli [1, 2]. The pathogenesis of SCJ infection is not well understood, but it appears to result from either haematogenous or contiguous spread [2]. The disease is unilateral in almost all cases [2]. Few authors have reported, as in our case, the association of SCJ infection and pleural effusion and/or pulmonary involvement [2-6]. It is not easy to locate the primary site of infection, although it seems that the particular anatomical structure of the SCJ itself could facilitate the dissemination of infection to the adjacent tissues [2-5]. These data, together with the manner of the onset of the symptoms, indicated the probability, also in the case described, of primitive joint involvement. As we observed, the clinical presentation is varied, insidious or characterized by acute onset. Complications of SCJ infection include fistula formation, mediastinitis and superior vena cava syndrome [1]. Moreover, there is a high incidence (about 20%) of cutaneous, mediastinal or chest wall abscess formation, and this appears to occur regardless of the presence of any particular underlying illness or of the organism responsible; delay in treatment may contribute to the high rate of this complication [3]. After nine weeks of appropriate therapy, although it was initiated early (three days after the onset of symptoms), our patient developed intrarticular abscessual collection, but no extra-articular abscesses were documented. Therapy for SCJ septic arthritis is controversial; medical treatment with early surgical exploration for culture specimens and for adequate curettage (especially when extensive osteomyelitis or perisynovial abscesses are present) is often recommended [1, 7]. In this case, the aetiology documented by haemoculture, the limited osteomyelitis and a favourable clinical course allowed us not to intervene surgically in the affected joint. Despite the late appearance of a complication and prolonged antibiotic therapy, we documented a successful slow outcome of SCJ infection achieved only with medical treatment.

*Key words*: sternoclavicular joint, infection, *S. aureus*.

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**SUMMARY**

Septic arthritis of the sternoclavicular joint (SCJ) is an uncommon condition and it has been associated with numerous predisposing factors. We describe a rare case of SCJ infection due to *Staphylococcus aureus* in an adult without known underlying predisposing conditions and in which recovery was achieved with medical therapy alone.

**RIASSUNTO**

L’artrite settica dell’articolazione sternoclavicolare è una patologia non comune e frequentemente associata a fattori di rischio predisponenti. Descriviamo un raro caso di infezione dell’articolazione sternoclavicolare da *Staphylococcus aureus* in un adulto senza apparenti fattori di rischio, in cui la guarigione è stata ottenuta con sola terapia medica.
REFERENCES